



Alex Zunger - Biographical Sketch

Background:

Recipient of the year 2001 John Bardeen Award of the TMS, and the year 2001 Rahman Award of the American Physical Society, and the year 2000 Cornell Presidential Medal. Fellow of the American Physical Society. Author of the 5th highest-impact paper ever to be published in Physical Review since 1893 (See Table II in : <http://xxx.arxiv.org/abs/physics/0407137>).

Alex Zunger received his Ph.D. from Tel-Aviv University, Tel Aviv, Israel, in 1976 where he worked with Prof. Joshua Jortner and Binyamin Englman on quantum theory of molecular solids. He moved to the U.S. in 1976, doing his postdoctoral research at the Physics Dept. of Northwestern University in 1976-1977. He then received the IBM Fellowship, which he spent at the Physics Dept. of U.C. Berkeley. When the Federal Government established a National Laboratory in Colorado in 1978, Dr. Zunger was asked to establish and head the Solid State Theory effort there, a position he still holds today. Concomitantly, Dr. Zunger became a Prof. of Physics (adjoint) at the Physics Dept. at Colorado University, Boulder until 1986. At the National Renewable Energy Laboratory (NREL), he was appointed in 1984 as Principal Scientist, and in 1991 as an Institute Research Fellow. He is the author of 450 journal articles, including over 110 articles in Physical Review Letters and Rapid Communications, and three citation classics. According to recent research done by the Institute of Scientific Information (ISI), he is the 39th most cited physicist out of more than 500,000 physicists examined, based on publications in 1981-1997 in all branches of physics (see description in : <http://www.sst.nrel.gov/citations.pdf>

Dr. Zunger's research field is Condensed Matter Theory of Real Materials. He developed in 1977 the first-principles density functional pseudopotentials. In 1978, he co-developed the Momentum space total energy method. In 1981, he developed with John Perdew the now most widely used exchange and correlation energy functional and the Self-Interaction Correction. In 1983, he developed a novel theoretical method for simultaneous relaxation of atomic positions and charge densities in self-consistent LDA calculations. Recently, he developed methods for calculating the electronic properties of semiconductor quantum nanostructures. The Bardeen Award was given to A. Zunger on his "seminal contributions to the theoretical understanding and prediction of "spontaneous ordering" in alloys whereas the Rahman award was given "for his pioneering work on the computational basis for first-principles electronic structure theory of solids." He is the winner of the DOE/MRI 1980 and 1990 Outstanding Achievement Award, and the 1997 DOE-BES award for Sustained Research in Solid State Physics. He is a seven-time invited speaker to the annual "American Physical Society March Meeting" and is a seven-time-invited speaker to the "Materials Research Society. See" Solid State Theory Home Page " at <http://nrel.sst.gov> for more detail, as well as the NREL Research Fellow page at http://www.nrel.gov/research_fellows/zunger.html